

Autonomous Agents and Multiagent Systems

2007/2008

Lab 7 – Strategies and Game Theory

Objectives

- Explore game theory strategies for a dilemma scenario.
- Confront and compare strategies.

Exercise

The main goal of this lab is to explore the issues in chapter 6 of [Wooldridge02] which refers to game theory strategies.

Start by reading the proposed game for this lesson and analyzing the base code.

Propose a strategy for a player which maximizes its result in a (limited) sequence of rounds. This sequence corresponds to a tournament which is managed by the agent defined in the “TournamentAgent” class. To start the tournament, start this agent by running the “tournament.bat” file.

The player agent is defined in the “PlayerAgent” class. To implement its strategy use the two methods available in the student area in the code. The `getPlayerAction` method returns the player’s action in each round. The `turnResult` method handles the previous round result.

Assess the proposed strategy with your colleagues. To do this you must provide the computer IP where the tournament agent is running and a name for the container where players are running. For example:

```
jade.Boot -host 127.0.0.1 -container C1 p:aasm.jade.game.PlayerAgent
```

Class Tournament

In this lab a tournament will take place to confront the students’ strategies. According to the number of students the tournament might be divided into qualification and elimination phases.

The winner is the one with the highest overall score. When more than one team has the same score, victory count will be used to arbitrate.

Reference: [Wooldridge02] - Wooldridge, M.; *An Introduction to Multiagent Systems*; John Wiley & Sons, Ltd; 2002